

Date: Thu, 19 Aug 93 04:30:14 PDT  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V93 #18  
To: Ham-Ant

Ham-Ant Digest                      Thu, 19 Aug 93                      Volume 93 : Issue    18

Today's Topics:

                    ??loop vr diapole  
                    ASA 9209 2M colinear - opinions?  
                    How to use dip oscillator on an antenna?  
Is there such thing as an omnidirectional antenna in 3 dimensions? (2 msgs)  
                    Mobile HF problems  
                    Need information on duplexers (3 msgs)  
Using a horizontally polarized antenna on 2m.-good or bad idea? (2 msgs)

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>

Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>

Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: 18 Aug 93 21:56:15 GMT  
From: timbuk.cray.com!walter.cray.com!rps@uunet.uu.net  
Subject: ??loop vr diapole  
To: ham-ant@ucsd.edu

>I plan to get a good commerical ant or my HF rig next year but until then  
>I would like some comment on the following--In the mean time I will make a  
>choice of two of the following ant. I can put up a diapole or a  
>horizontol loop..The loop will take more work but will it be that much  
>better than diapole? Would most hams do the extra work to put up a loop?  
>The loop will be used for 40 to 10 meters with a tunner..please  
>comment..tnx Jeff N6MYF,  
>  
For best results I have been told.

Without compromise.

Keep the wire to a full wave on 40m (140ft). A Full wave delta is about 2db gain over a dipole. Use openfaced balanced feed (ladder line) for less loss. Try and keep the whole thing 1/4 wave (32ft) off the ground.

With compromises.

Just have a loop a triangle (delta). (less work)  
Make it as high as you can. No less than 8' at the ends.  
Balanced line works best. (keep its length around 1/4, 1/2 or full wave ratios.

If you use coax with the loop you might as well have a (non-loop) dipole with ladder line as they are about the same. Coax is about 2 db loss per 100ft on 10m where open ladder line is about .15 db loss per 100ft. Baluns and traps suck. The space you save by using a trap isn't worth it. Put your money in a good tuner. If you have to use coax stick with RG-8 FOAM type coax.

Good Luck!

I have a 130' dipole and a 65' dipole. One North/South the other East/West. Both outperform the R7 my neighbor has hands down on on 40m and 80m.

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Date: Wed, 18 Aug 93 20:02:53 GMT  
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!  
sol.ctr.columbia.edu!news.kei.com!ub!galileo.cc.rochester.edu!  
cookiemonster.cc.rochester.edu!owens@network.ucsd.edu  
Subject: ASA 9209 2M colinear - opinions?  
To: ham-ant@ucsd.edu

I just ran across an ad for this antenna, at what seems a very nice price (less than \$40). Has anyone had experience with this antenna? I was planning on building something simple and cheap to put on the roof before winter, with an eye towards something better at a later date, but if this is a good antenna I'll go for it now. I only ask because it seems too good (cheap) to be true ;)

Thanks,

Bill N2RKL

Bill Owens  
727 Elmwood Avenue  
Rochester, NY 14620

owens@cc.rochester.edu  
MIME and PEM accepted  
716/275-9120

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Date: Wed, 18 Aug 1993 17:31:25 GMT  
From: pa.dec.com!nntpd2.cxo.dec.com!nuts2u.enet.dec.com!little@decwrl.dec.com  
Subject: How to use dip oscillator on an antenna?  
To: ham-ant@ucsd.edu

algol@stein.u.washington.edu () writes:

> Does anyone out there have any experience using a dip oscillator on  
> antennas? I'm finding that unless the antenna has a lumped inductance to  
> couple into I have no luck getting a dip. I've followed Moxon's advice  
> in \_HF Antennas for all Locations\_ and made a big (12") triangular loop  
> with two turns, but I'm still not having much luck. Any suggestions?  
> Capacitive coupling? A BIGGER loop? Does listening for a dip with audio  
> modulation really help that much (my dipper is homebrew -- it wouldn't  
> take much to add 1000 Hz square wave modulation)? Tips, hints, sea stories  
> all welcome... does anyone even use dippers anymore?

I attach the feedpoint of the antenna to a small coil of perhaps 3 or 4  
turns that is large enough to insert the coil from the dip meter. This  
inductive coupling seems to work fine for me.

73,  
Todd  
N9MWB

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Date: Wed, 18 Aug 1993 19:00:38 GMT  
From: swrinde!sdd.hp.com!col.hp.com!news.dtc.hp.com!srigenprp!  
alanb@network.ucsd.edu  
Subject: Is there such thing as an omnidirectional antenna in 3 dimensions?  
To: ham-ant@ucsd.edu

Dale Roberts (roberts@ishtar.med.jhu.edu) wrote:

: I'm looking for an antenna of some sort that I can use as an  
: omnidirectional field strength indicator. We have a system that  
: produces 3 orthogonal (at 90 degrees to one another) magnetic fields  
: at 3 frequencies.

I assume what you want is an antenna that responds to magnetic fields only. (Radio antennas respond to electromagnetic fields.)

How about 3 small loop antennas mounted perpendicular to each other? Detect the output of each loop separately and combine the voltages (or currents) RMS fashion:  $V(\text{total}) = \text{SQRT} ( V1^2 + V2^2 + V3^2 )$ . That would give you the magnitude of the magnetic field, no matter what its orientation.

How to do the RMS sum? Use a diode detector in its square-law region. At low signal levels, any RF switching diode (connected as a detector) puts out a DC voltage proportional to the square of the input RF voltage. By summing the 3 outputs (from the 3 pickup loops), you get a signal proportional to the square of the total magnetic field.

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Date: Wed, 18 Aug 1993 21:47:44 GMT  
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!spool.mu.edu!  
olivea!apple.com!goofy.apple.com!michael.apple.com!ems@network.ucsd.edu  
Subject: Is there such thing as an omnidirectional antenna in 3 dimensions?  
To: ham-ant@ucsd.edu

In article <CByy53.AwA@srgenprp.sr.hp.com> alanb@sr.hp.com (Alan Bloom) writes:  
>Dale Roberts (roberts@ishtar.med.jhu.edu) wrote:

>  
>: I'm looking for an antenna of some sort that I can use as an  
>: omnidirectional field strength indicator. We have a system that  
>: produces 3 orthogonal (at 90 degrees to one another) magnetic fields  
>: at 3 frequencies.

>  
>I assume what you want is an antenna that responds to magnetic fields  
>only. (Radio antennas respond to electromagnetic fields.)

>  
>How about 3 small loop antennas mounted perpendicular to each other?

Um, er there is the neat antenna used on satellites prone to tumbling that has pretty good omni characteristics.. even so far as polarization too! It is called something like a QuadraFilar Helical Mumble or some such... Gack, where is my ARRL Antenna Handbook...

It looks kind of like someone took an egg beater and twisted it so that the 4 sides (hoops?) were spiraled by about 1/2 turn. Really geeky, but supposedly helps to avoid fading from a rotating tumbling satellite vs a fixed polarization ground antenna...

If you can't find a copy of the ARRL Antenna Handbook, I'll get more data from my copy at home.

— —

E. Michael Smith    ems@apple.COM

'Whatever you can do, or dream you can, begin it. Boldness has genius, power and magic in it.' - Goethe

I am not responsible nor is anyone else. Everything is disclaimed.

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Date: 18 Aug 93 16:58:37 GMT  
From: idacrd.ccr-p.ida.org!idacrd!n4hy@uunet.uu.net  
Subject: Mobile HF problems  
To: ham-ant@ucsd.edu

Mike:

Transmit for a couple of minutes on SSB or sending a few words per minutes CW. Go out and feel the resonator. I bet it is VERY warm. Just because your antenna matcher has told your transceiver that it has a matched load does NOT mean the load is an efficient radiator at the frequency you are using it. If that were the case, all of us with apartment problems would buy a dummy load and work the world. I suspect you have (effectively) a big resistor (dummy load) matched perfectly to your transceiver.

Bob

— —

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Robert W. McGwier	n4hy@ccr-p.ida.org
Center for Communications Research	Interests: amateur radio, astronomy,golf
Princeton, N.J. 08520	Asst Scoutmaster Troop 5700, Hightstown

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Date: 18 Aug 1993 21:16:05 GMT  
From: nothing.ucsd.edu!brian@network.ucsd.edu  
Subject: Need information on duplexers  
To: ham-ant@ucsd.edu

jdwhite@iastate.edu (Jason White) writes:

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> I would like to learn more about duplexers and how to maintain and
>"configure" them. Any suggestions on where I might look for some good
>information.
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If you can find the "FM and Repeater Handbook" by Ken Sessions K6MVH, (out of print, but probably to be found in a big library) there is a pretty good section on duplexers there. There is also some information in the ARRL repeater handbook.

Also, call the various duplexer manufacturers and ask their customer service people if you could have a copy of the tuning instructions for their product. Many of these are actually a good introduction to the way the duplexer works.

In general, assuming that the coupling cables between cavities aren't missing, tuning will only require a good quality signal (a one-watt walkie works fine for me), a dummy load, and a receiver with a usable S-meter.

If the duplexer is a pass-notch type, you have to peak all the pass cavities, then null the notches. You repeat this several times. Typically the pass tuning is the one in the center of the bottle; the notch is the slug off to the side or the sliders on the side.

Notch-only duplexers are simpler: you just null all the notches.

60 db isolation is minimum; I regularly see 70 to 90 db after several rounds of tweaking the bottles.

Have fun!  
- Brian

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Date: 18 Aug 93 19:56:48 GMT  
From: ogicse!uwm.edu!cs.utexas.edu!swrinde!elroy.jpl.nasa.gov!merlin.JPL.NASA.GOV!  
no6b@network.ucsd.edu  
Subject: Need information on duplexers  
To: ham-ant@ucsd.edu

In article <CBy9x3.IGt@news.iastate.edu> jdwhite@iastate.edu (Jason White) writes:  
> I would like to learn more about duplexers and how to maintain and  
>"configure" them. Any suggestions on where I might look for some good  
>information. I looked in the '92 Handbook, but all I found was a paragraph on  
>what duplexers were; nothing on how to maintain them.  
>

Try the ARRL publication "FM & repeaters". Don't know how well they've been updating it recently but in the past it's been way out of date. However, there were instructions in the 1980 printing on how to build one, & duplexer technology doesn't change much over the years. In what way do you want to "maintain" your duplexers? Once they are tuned they generally don't require any

tinkering.

-----  
Date: 18 Aug 93 21:09:25 EDT  
From: psinntp!arrl.org@uunet.uu.net  
Subject: Need information on duplexers  
To: ham-ant@ucsd.edu

In rec.radio.amateur.misc, no6b@merlin.JPL.NASA.GOV (Robert Dengler) writes:

>In article <CBy9x3.IGt@news.iastate.edu> jdwhite@iastate.edu (Jason White)  
writes:

>> I would like to learn more about duplexers and how to maintain and  
>>"configure" them. Any suggestions on where I might look for some good  
>>information. I looked in the '92 Handbook, but all I found was a paragraph on  
>>what duplexers were; nothing on how to maintain them.

>>

>

>Try the ARRL publication "FM & repeaters". Don't know how well they've been  
>updating it recently but in the past it's been way out of date. However, there

This book is loooong out of print. You might contact manufacturers  
and get their recommendations.

73, Jim, KR1S

--

jkearman@arrl.org

-----  
Date: 18 Aug 93 17:37:10 GMT  
From: ogicse!emory!europa.eng.gtefsd.com!howland.reston.ans.net!spool.mu.edu!  
news.nd.edu!mac20@network.ucsd.edu  
Subject: Using a horizontally polarized antenna on 2m.-good or bad idea?  
To: ham-ant@ucsd.edu

In article <easu348.745664711@orion.oac.uci.edu>, easu348@orion.oac.uci.edu  
(Andrew Schwartz Parker) wrote:

>

> I got advise from someone that it is helpful to use a horizontally polarized  
> antenna on 2m. I live in an area with heavy population with a good amount of  
> jamming lately. This person said that with his horizontally polarized antenna  
> he can cut through the QRM with ease, even only running a few watts. I was  
> wondering what people's opinions are out here about doing that before I went  
> out and bought a new antenna for the house. Thanks much.

>

> --

> Andrew Parker | KD6TGM | easu348@orion.oac.uci.edu

Andrew, I think you will get better advice on your question if you could provide some more specifics. Are you trying to hit FM repeaters, or are you trying to work SSB DX, and how much power are you expecting to run? Also, how high will your antenna be above ground?

-----  
Date: 18 Aug 93 21:22:18 GMT  
From: news.service.uci.edu!orion.oac.uci.edu!easu348@network.ucsd.edu  
Subject: Using a horizontally polarized antenna on 2m.-good or bad idea?  
To: ham-ant@ucsd.edu

Charles.R.Hohenstein.1@nd.edu (Charles R. Hohenstein) writes:

>In article <easu348.745664711@orion.oac.uci.edu>, easu348@orion.oac.uci.edu  
>(Andrew Schwartz Parker) wrote:

>>  
>> I got advise from someone that it is helpful to use a horizontally polarized  
>> antenna on 2m. I live in an area with heavy population with a good amount of  
>> jamming lately. This person said that with his horizontally polarized antenna  
>> he can cut through the QRM with ease, even only running a few watts. I was  
>> wondering what people's opinions are out here about doing that before I went  
>> out and bought a new antenna for the house. Thanks much.

>>  
>> --

>> Andrew Parker | KD6TGM | easu348@orion.oac.uci.edu

>Andrew, I think you will get better advice on your question if you could  
>provide some more specifics. Are you trying to hit FM repeaters, or are you  
>trying to work SSB DX, and how much power are you expecting to run? Also,  
>how high will your antenna be above ground?

Sorry, I knew I should have put that in. I will be working FM only. Mostly repeaters, with some simplex thrown in for good measure. The antenna will be on my roof, which is about 20 feet above ground. In general, I will not be running more than 5 watts at any time, but there may be a chance of jumping up to 50 some day. Hope this helps everyone out a bit.

--  
Andrew Parker | KD6TGM | easu348@orion.oac.uci.edu

-----  
Date: 18 Aug 93 23:45:52 GMT  
From: ogicse!uwm.edu!wupost!spool.mu.edu!news.nd.edu!mac20@network.ucsd.edu  
To: ham-ant@ucsd.edu



References <easu348.745664711@orion.oac.uci.edu>,  
<Charles.R.Hohenstein.1-180893123317@mac20.hesburgh.lab.nd.edu>,  
<easu348.745708764@orion.oac.uci.edu>  
Subject : Re: Using a horizontally polarized antenna on 2m.-good or bad idea?

In article <easu348.745708764@orion.oac.uci.edu>, easu348@orion.oac.uci.edu  
(Andrew Schwartz Parker) wrote:

>  
> Sorry, I knew I should have put that in. I will be working FM only. Mostly  
> repeaters, with some simplex thrown in for good measure. The antenna will be  
> on my roof, which is about 20 feet above ground. In general, I will not be  
> running more than 5 watts at any time, but there may be a chance of jumping  
> up to 50 some day. Hope this helps everyone out a bit.

>  
Thanks for the extra information. It seems to me that vertical polarization  
is what you want for your antenna, given your interest in local FM work.  
Horizontal polarization is the standard for SSB DX, but that is not your  
interest, and would probably be a little hard to manage anyway with low  
power and limited antenna height.

-----

Date: Wed, 18 Aug 1993 17:24:21 GMT  
From: ray@cs.rochester.edu  
To: ham-ant@ucsd.edu

References <243bkoINNb4@gap.caltech.edu>, <crispCBGCy0.8JG@netcom.com>,  
<24segg\$iee@huon.itd.adelaide.edu.au>edu  
Subject : Re: Wavelength formula

In article <24segg\$iee@huon.itd.adelaide.edu.au> bvandepe@physics.adelaide.edu.au  
(Brenton Vandeppeer) writes:

>crisp@netcom.com (Richard Crisp) writes:

>  
>>In article <243bkoINNb4@gap.caltech.edu> slr@cco.caltech.edu (Steve L. Rhoades)  
writes:

>>

>>For those interested in a bit more rigorous treatment:

>

>>lambda \* f = velocity of propagation (speed of light for a radio wave in air or  
>> vacuum)

>

>>where lambda = wavelength

>> f = frequency

>

>>for the approximation that light travels at the speed of  $3 \times 10^8$  meters/sec

>

```

>>lambda * freq = 3x10**8
>
>>let freq = 300mhz:
>
>>lambda = (300x10**6 m/sec)/(300x10**6 cycles/sec)
>>      = 1 meter
>
>Well, if you're going to be rigorous, you should use the correct SI exponent
>abbreviation for millions of Hz. 300 MHz is some 10^12 times smaller than
>300 MHz.
>
>Just being picky...    :-)
>
>Regards,
>--
>Brenton Vandepeer,      Moon jet brave beam split ceiling swerve
>Department of Physics,   and light the old Valhalla.
>University of Adelaide.  Come join with us please - Valkyrie maidens cry
>bvandepe@physics.adelaide.edu.au  above the Cold Wind to Valhalla.

```

To really simplify things just do this:

Speed of light = 300 million meters per second or  
 980 million feet per second.

These speeds are are close enough for anything you probably want to do.

Thus: wavelength = speed of light divided by the frequency or  
 wavelength = 300,000,000/frequency gives wavelength in meters.  
 wavelength = 980,000,000/frequency gives wavelength in feet.

Lambda is a term I haven't used since college days (many years ago).  
 So I use wavelength which is a more descriptive term. Thus the  
 half wavelength of my CB antenna is 18 feet which is more clear than saying  
 that the half lambda of my CB antenna is 18 feet.

ray

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Date: 18 Aug 1993 06:15:11 GMT  
 From: munnari.oz.au!metro!basser.cs.su.oz.au!news.adelaide.edu.au!  
 bvandepe@network.ucsd.edu  
 To: ham-ant@ucsd.edu

References <243bkoINNb4@gap.caltech.edu>, <crispCBGCy0.8JG@netcom.com>,

<24segg\$iee@huon.itd.adelaide.edu.au>

Subject : Re: Wavelength formula

bvandepe@physics.adelaide.edu.au (Brenton Vandepeer) writes:

>crisp@netcom.com (Richard Crisp) writes:

>>In article <243bkoINNb4@gap.caltech.edu> slr@cco.caltech.edu (Steve L. Rhoades) writes:

>>

>>For those interested in a bit more rigorous treatment:

>> $\lambda * f$  = velocity of propagation (speed of light for a radio wave in air or vacuum)

>>where  $\lambda$  = wavelength

>>           $f$  = frequency

>>for the approximation that light travels at the speed of  $3 \times 10^8$  meters/sec

>> $\lambda * \text{freq} = 3 \times 10^8$

>>let  $\text{freq} = 300\text{mhz}$ :

>> $\lambda = (300 \times 10^6 \text{ m/sec}) / (300 \times 10^6 \text{ cycles/sec})$

>>          = 1 meter

>Well, if you're going to be rigorous, you should use the correct SI exponent  
>abbreviation for millions of Hz. 300 mHz is some  $10^{12}$  times smaller than  
>300 MHz.

Of course, if you're really going to be picky, I 'spose you should get it  
right ...       Make that  $10^9$  Hz smaller. Ooops.

--

Brenton Vandepeer,                   Moon jet brave beam split ceiling swerve  
Department of Physics,               and light the old Valhalla.  
University of Adelaide.               Come join with us please - Valkyrie maidens cry  
bvandepe@physics.adelaide.edu.au    above the Cold Wind to Valhalla.

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End of Ham-Ant Digest V93 #18

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